Republic of Kenya

Ministry of Agriculture, Livestock, Fisheries & Cooperatives
State Department for Crop Development and Agricultural Research

Issue 33

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Kenya Crop Conditions Bulletin
November 2021

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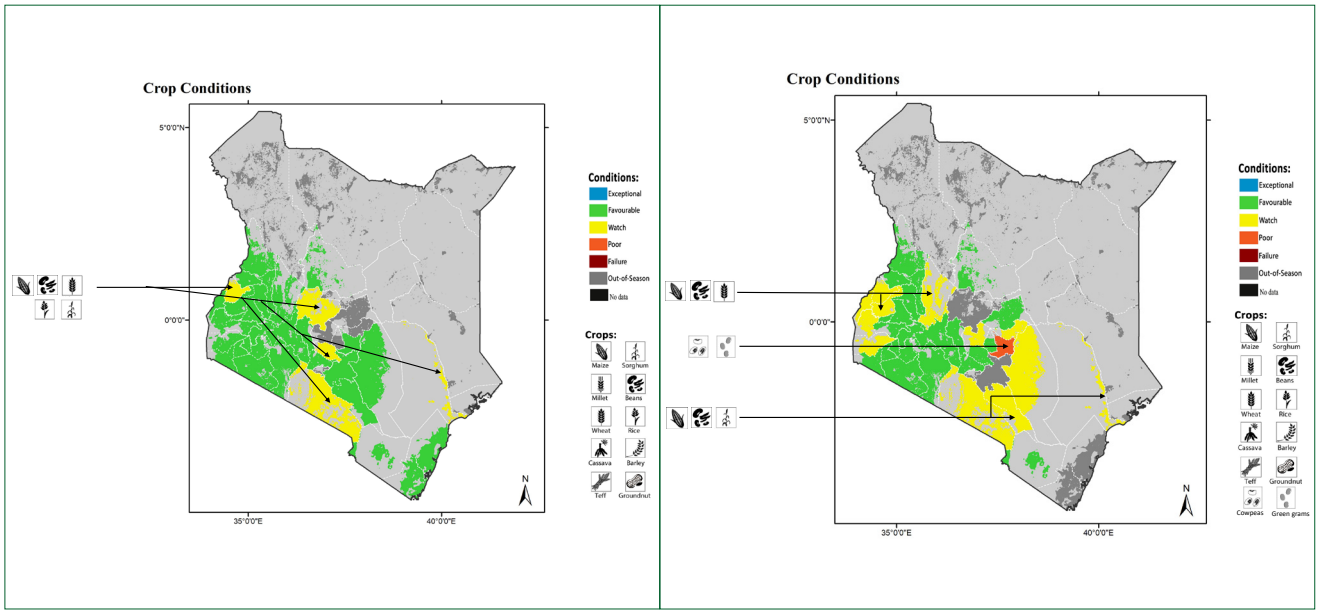
National Synthesis (Maize, Beans, Wheat)

Overview

- Occasional rainfall was experienced over a few areas in the Highlands West of the Rift Valley, the Lake Victoria Basin, Central and South Rift Valley and the Highlands East of the Rift Valley which was a challenge to harvesting that is still ongoing in Upper zones of Kakamega, Bungoma, parts of North and central Rift counties
- The Southeastern lowlands, Northeastern and the Coastal region experienced rainfall in the fourth week of November which is likey to improve the condition of existing short rains crop and germination of the dry planted crops in these areas
- Maize harvesting is between 65% - 90% in the North Rift region with the month being drier compared to October which was more conducive for the ongoing harvesting

In the Bulletin



Regional crop conditions October 2021 **Regional crop conditions November 2021**

Map showing regional crop conditions information in Kenya for October 2021 and November 2021 for maize, beans, wheat, green grams, cowpeas, rice and sorghum. The crop monitor map is based on a combination of several variables including remotely sensed data, ground observations, field reports, national and regional experts. Crops with conditions that are other than favourable are labelled on the map with the driver for the resultant condition. The situation in the country has deteriorated in the last month with more areas coming under watch due to lack of rains as compared to last reporting period.

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OUTLOOK (Kenya Meteorological Department (KMD)/State Department for Crops Development (SDCD)

December normally marks the cessation of the October-November-December (OND) "short-rains" season in Kenya. The forecast for the month of December indicates that several parts of the country are likely to experience below-average (generally depressed) rainfall. However, near average rainfall is likely over the South Eastern lowlands, Highlands East of the Rift Valley as well as parts of Central and South Rift Valley. Isolated storms are likely in these regions during the first half of the month. The rainfall distribution, both in time and space, is expected to be generally poor. The October-November-December (OND) 2021 seasonal rainfall is likely to cease between the second to fourth weeks of December over several parts of the country.

Assessment by Region

North Rift Region

Maize harvesting is between 65%-90% in the North Rift region with the month being drier compared to October which was conducive for the ongoing harvesting. Wheat harvesting is complete with normal yields being achieved. The short rains beans crop is in watch condition in Uasin Gishu and Trans Nzoia due to the dry spell at flowering with poor yields being expected while the crop is at vegetative stage in Nandi. Planting was delayed in Baringo due to late onset of the OND rains.

Table 1: North Rift Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Baringo	33,564	503,460	37,614	712,350	5,858	65,844
Elgeyo Marakwet	30,200	1,004,500	30,970	1,080,235	358	5,317
Laikipia	25,500	316,450	22,031	382,938	3,662	15,665
Nandi	65,300	2,000,000	63,103	2,008,469	3,510	20,255
Samburu	9,600	50,000	7,185	70,918	620	1,118
Trans Nzoia	105,110	4,529,950	102,896	4,794,879	0	0
Turkana	282	888	3,948	38,022	1,692	14,067
Uasin Gishu	104,581	3,837,935	103,588	4,235,958	0	0
West Pokot	39,732	794,640	30,532	728,511	0	0
Total	**413,869**	**13,037,823**	**401,868**	**16,125,059**	**15,700**	**122,266**

South Rift Region

Harvesting of maize is over 65% in Kericho while the short rains crop in the region is in favorable condition in Narok, Nakuru and Bomet because of the rains experienced in the month. However maize crop in Kajiado is under watch due to delayed rain for short season but is expected to improve with rains received in last wek of November. Other counties where the short rain season starterd well the crops are in vegetative stage. Beans are in favourable condition in Kericho, Narok, Bomet and Nakuru because of good rainfall bu the crop in Kajiado is under watch due to delayed onset of rains

The yields expected from the region is normal if the rains continue with exception of Kajiado wher it is uncertain. Nakuru expects a lower harvest than normal, due to delays in the rains during the early developmental phases of the crop.

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Figure 1: Nakuru County Staff Conduct Maize Crop Cutting Exercise at Ingobor, Kapkures Ward and in Njoro Sub County

Table 2: South Rift Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Bomet	32,000	369,156	25,951	495,001	6,529	46,805
Kajiado	6,760	49,120	6,780	71,895	30,592	53,312
Kericho	35,068	1,284,106	35,397	1,138,504	578	6,855
Nakuru	81,246	1,792,374	80,374	2,242,768	2,122	2,735
Narok	93,165	1,628,637	83,159	1,839,387	29,230	154,466
Total	**248,239**	**5,123,393**	**231,661**	**5,787,555**	**69,051**	**264,173**

Central Region

In Central region maize ,beans and potatoes are favorable condition in Nyandarua, Muranga and Kiambu while in Nyeri, maize and beans are poor because over 95% of the crop is stunted and at early vegetative due to moisture stress and drying in some areas. In Kirinyaga the crops are under watch due to moisture stress easpecially in the lower areas. Rice is in favourable condition in Kirinyaga. Wheat is in favourable condition in Nyandarua and it is under long rains while in Nyeri the crop is under watch. The outlook is such that if the current hot and dry weather conditions persist, maize in Nyeri county is likely to experience a crop failure. However, normal production is expected in Nyandarua, Kiambu and Muranga for maize but below normal production is expected for beans due to the dry spell.

Table 3: Central Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Kiambu	16,800	194,253	20,075	309,740	11,516	106,760
Kirinyaga	16,573	257,975	17,809	245,692	19,810	144,738
Murang'a	35,015	348,680	34,709	379,016	30,738	154,075
Nyandarua	17,100	410,004	17,212	288,128	0	0
Nyeri	13,985	181,116	16,720	232,266	15,081	45,662
Total	**99,473**	**1,392,028**	**106,524**	**1,454,842**	**77,145**	**451,235**

Lower Eastern Region

The region dry planted and the delayed onset affected the acreage achieved as the dry season entered into third week of November. The rain onset was generally in the last week of November and germination and replanting is expected in the month of December. The distribution was also poor in space and time, some pockets have crops at weeding while in most areas germination was yet to take place. The targeting for all crops for the short rains has decreased with the delayed onset. Outlook for expected production is poor yields.

Table 4: Lower Eastern Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Kitui	32,553	19,712	31,095	140,873	51,010	35,113
Machakos	71,944	359,857	78,064	537,106	50,900	182,860
Makueni	54,121	253,012	68,864	294,211	60,964	200,774
Total	**158,618**	**632,581**	**178,023**	**972,191**	**177,955**	**464,409**

Upper Eastern Region

In Upper Eastern region, maize and beans are in worsening condition in Embu due to prolonged dry condition after germination. In Meru, the trend is fair and weeding is ongoing. The crops are in favorable condition in Tharaka Nithi county with beans in flowering stages in the upper parts of Tharaka Nithi county. Conditions in Meru are under watch due to erratic rainfall that was experienced in the county. The erratic nature of the rains being received in the current season is likely to result to crop failure of up to 50% in lower areas of Embu and Tharaka Nithi. Crops are unlikely to perform well due to moisture stress due to lack of enough rains in the region and dry spells in the first half of the month experienced in Meru County.

Table 5: Upper Eastern Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Embu	20,046	201,579	17,595	231,734	17,505	86,409
Garissa	85	147	73	674	176	783
Mandera	1,514	6,947	1,538	7,473	788	2,031
Marsabit	340	965	291	1,485	330	1,020
Meru	22,320	199,565	26,335	332,609	57,081	303,221
Tharaka Nithi	12,700	151,940	11,259	142,047	18,635	107,535
Wajir	120	240	300	3,097	210	645
Total	**57,125**	**822,151**	**57,391**	**719,118**	**94,725**	**501,644**

Figure 2: Beans in Mbeti South Ward of Mbeere South Sub County, Embu County

Coast Region

The region like the lower eastern region received rains in the last week of November as farmers had dry planted , germination and replanting is expected in the first week of December. The targeting for short rains has decreased with the delayed onset that lasted beyond the forecasted onset. The expected production is tending to failure due to the expected cessation in December unless the rains continue.

Table 6: Coast Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Kilifi	21,718	86,823	60,647	578,820	16,966	40,698
Kwale	42,070	186,760	55,847	533,606	21,250	78,999
Lamu	15,750	84,888	19,097	314,417	4,986	46,865
Mombasa	210	435	584	4,835	6	26
Taita Taveta	4,550	14,875	8,061	87,553	9,628	35,437
Tana River	2,684	1,284	3,026	42,839	196	748
Total	**86,982**	**375,065**	**147,262**	**1,562,070**	**53,032**	**202,773**

Nyanza Region

In the Nyanza region, more than 70% of the maize is at the vegetative and tasseling stage. The conditions for maize are favorable though tending to watch due to the erratic rains experienced within the month. The performance in this region is expected to be average to slightly below average as a result of this stress. Short rains received in time leading to average production expected. The beans performance in upper Nyanza is relatively better this season because the rainfall intensity was average hence reducing cases of rotting and disease attack. Maize performance is expected to be normal to slightly below normal in Lower Nyanza while in Upper Nyanza is expected to have normal yields. The beans' crop yield is expected to be normal due to stable conditions for the growth of the crop in the region.

Table 7: Nyanza Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Homa Bay	46,322	557,076	43,652	714,294	23,790	91,146
Kisumu	37,730	180,000	29,507	491,183	11,250	30,803
Migori	46,400	694,723	45,448	890,672	12,457	121,634
Siaya	48,300	386,170	46,817	748,062	20,700	106,115
Kisii	34,750	625,500	37,801	867,098	34,910	314,190
Nyamira	28,060	645,700	24,458	446,923	16,758	96,517
Total	**241,562**	**3,089,169**	**227,683**	**4,158,232**	**119,865**	**760,405**

Figure 3: Maize Crop in Migori County

Western Region

In Western region short rains maize is at tasseling to harvesting in Vihiga, Busia, lower sub counties of Kakamega and Bungoma. Dry spells and isolated cases of FAW were observed due sudden rains cessation in the region. In upper zones of Kakamega and Bungoma counties maize harvesting is 90% complete. In Vihiga, Busia and lower region of Kakamega and Bungoma, the second season beans are at podding to harvesting. Conditions are under watch for short rains beans in Busia, Kakamega and Bungoma Counties due sudden cessation of rainfall.

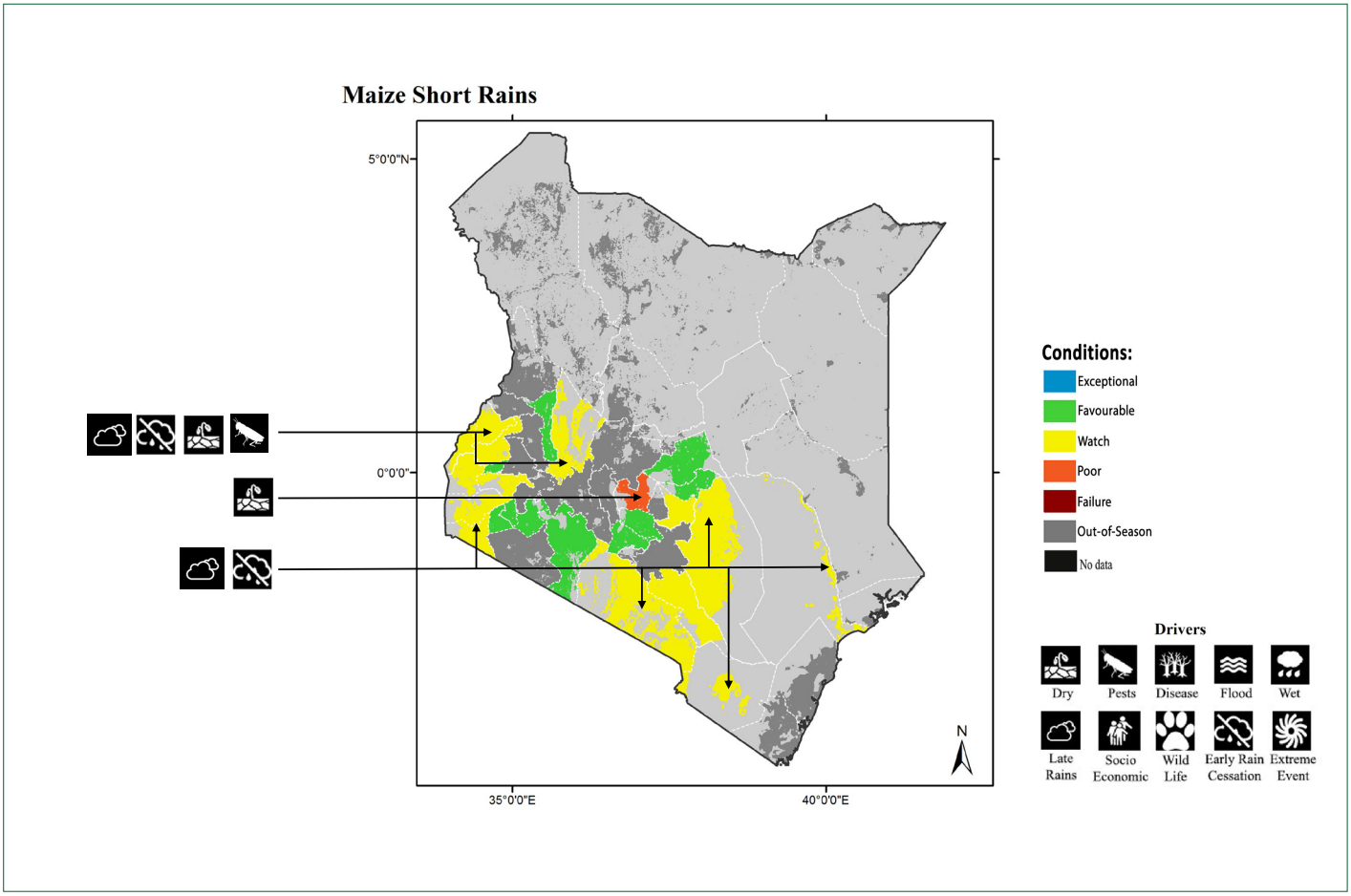
The outlook for the short rains maize production is below average to normal for Bungoma, Kakamega and Busia if there is timely resumption of rainfall. Short rains beans are projected to decline in Kakamega, Bungoma and Busia due moisture stress at key productive phases of flowering podding and grain filling but to be normal in Vihiga. Irish potato production in Mt Elgon sub County of Bungoma County is projected to decline due bacterial wilt infection and moisture stress.

Table 8: Western Region Maize Production Forecast

County	Achieved Area(Ha)LR	Forecast Production (90 Kg Bag) LR	LTA Achieved Area(Ha)	LTA Achieved Production	SR Targets (Ha)	SR Target production (90kg Bag)
Bungoma	90,750	2,706,560	89,723	3,383,202	4,704	40,298
Busia	31,000	467,670	29,441	459,267	15,086	80,737
Kakamega	78,500	2,132,845	76,042	2,353,049	4,705	17,880
Vihiga	14,730	296,228	18,249	290,420	18,310	85,068
Total	**461,892**	**10,547,324**	**445,116**	**12,273,494**	**42,805**	**223,983**

Assessment by Crop

Maize Conditions Short Rains Summary



The harvesting of the long rains maize crop is between 65%-90% in the North rift region and the upper parts of Bungoma and Kakamega, with the month being drier compared to October which was conducive for the ongoing harvesting. Harvesting of maize is over 65% in Kericho while the short rains crop in the region is in favorable condition in Narok, Nakuru and Bomet because of the rains being received. Crop-cutting is being conducted in Nakuru county under the crop insurance programme in maize growing counties.

In Central region short rains maize is in favorable condition in Nyandarua, Muranga and Kiambu while in Nyeri, maize is at early vegetative stages but is in poor condition due to moisture stress and some crop is drying in some areas of Nyeri. Normal production is expected in Nyandarua, Kiambu and Muranga for maize. In the Nyanza region, more than 70% of the maize is at the vegetative and tasseling stage. The conditions for maize are favorable though tending to watch due to the erratic rains experienced within the month.

In Western region short rains maize is at tasseling to harvesting in Vihiga, Busia, lower sub counties of Kakamega and Bungoma. Dry spells and isolated cases of FAW were observed due sudden rains cessation in the region.

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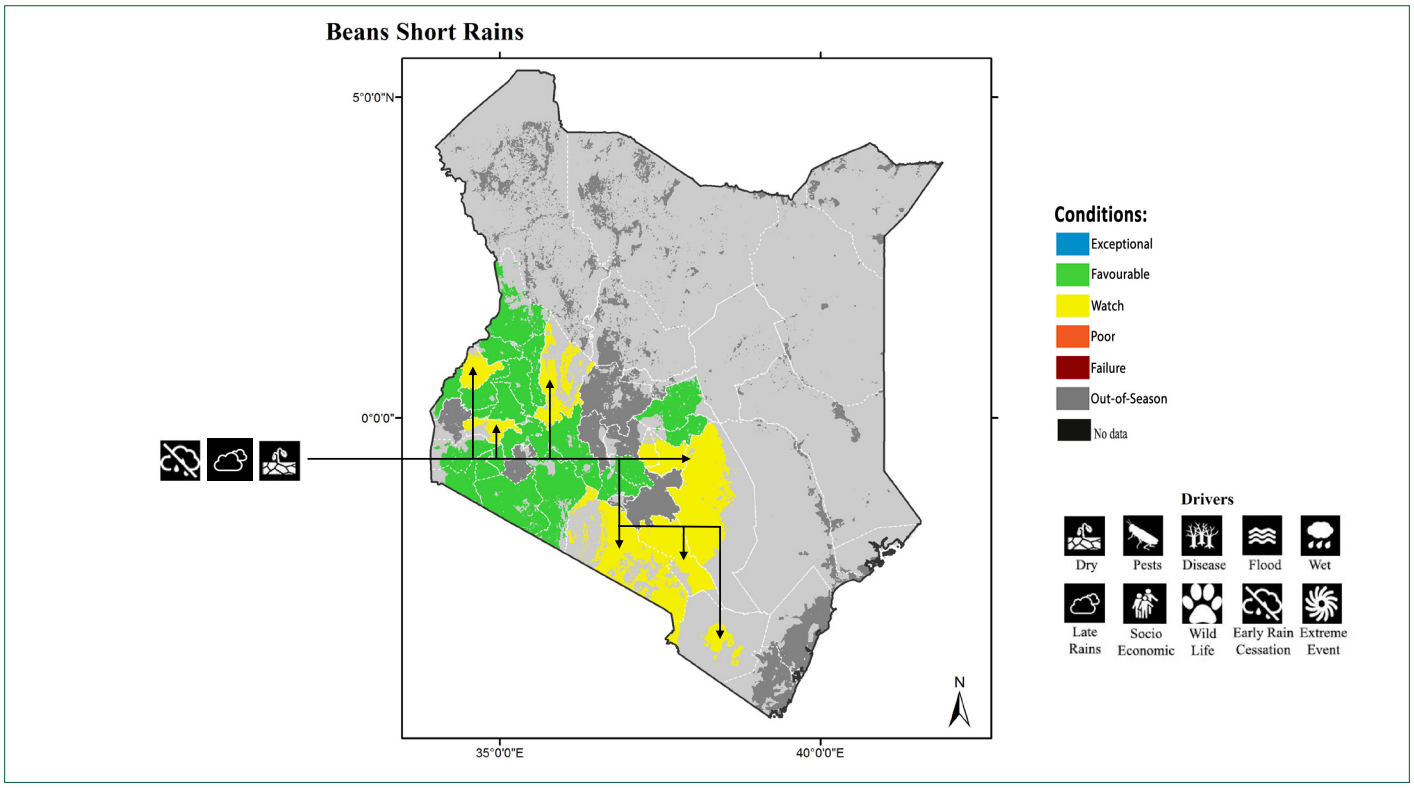
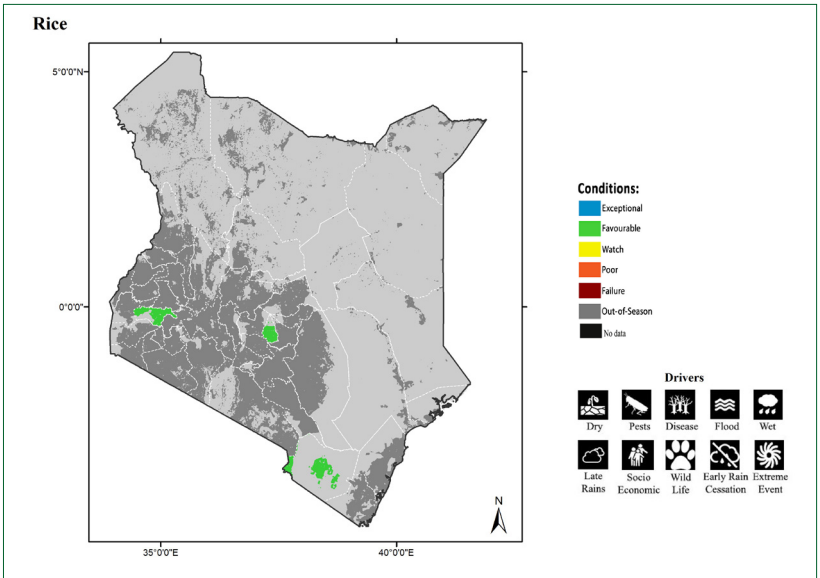
Bean Conditions Short Rains

The short rains beans crop is in favorable condition in most of the country with exception of Upper Eastern where the crop is under watch due to erratic rainfall and was at germination in Lower Eastern and Coast regions. Uasin Gishu reported better yields of short rains crop compared to long rains. Kericho, Bomet, Nakuru, Narok and Nyanza and Western Regions were expecting normal to slightly below average yields. In Lower Eastern and parts of Coast planting has been done and germination and gapping is expected to be complete by the end of the month.



Rice Conditions Short Rains

In Kirinyaga, crop condition is good and most of the crop is at reproductive to maturity stages. Normal production expected. Rice in Taita Taveta is doing well and is in good condition and 95% of the targeted yield will be realized. In Busia,Siaya and Kisumu conditions are favourable for rice which is at all stages transplanting to early vegetative stage and harvesting for the earlier planted crop and yields are expected to be normal.



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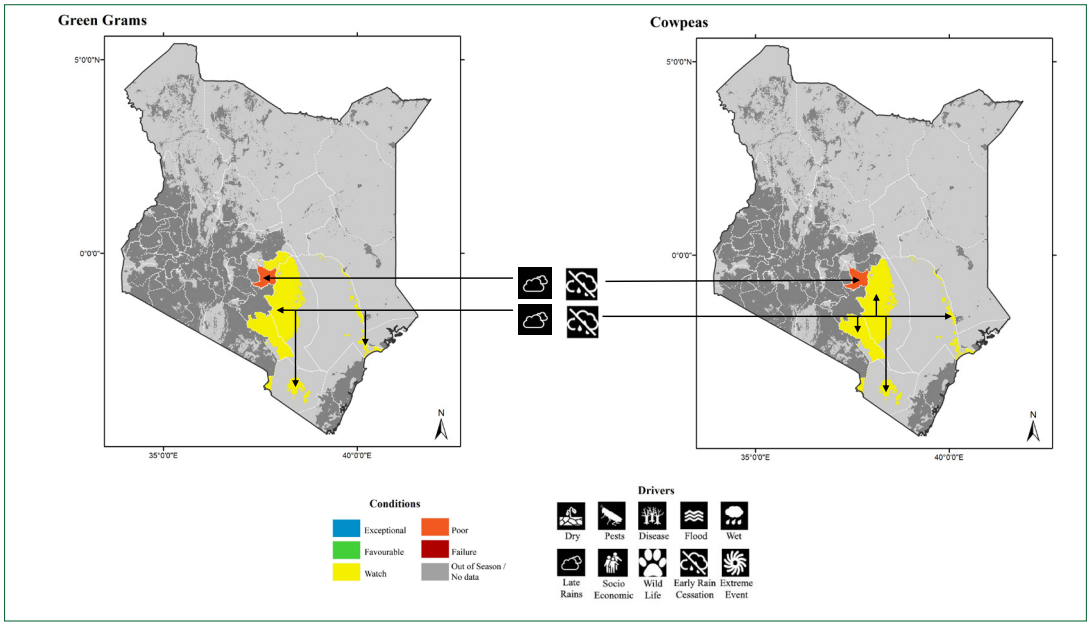
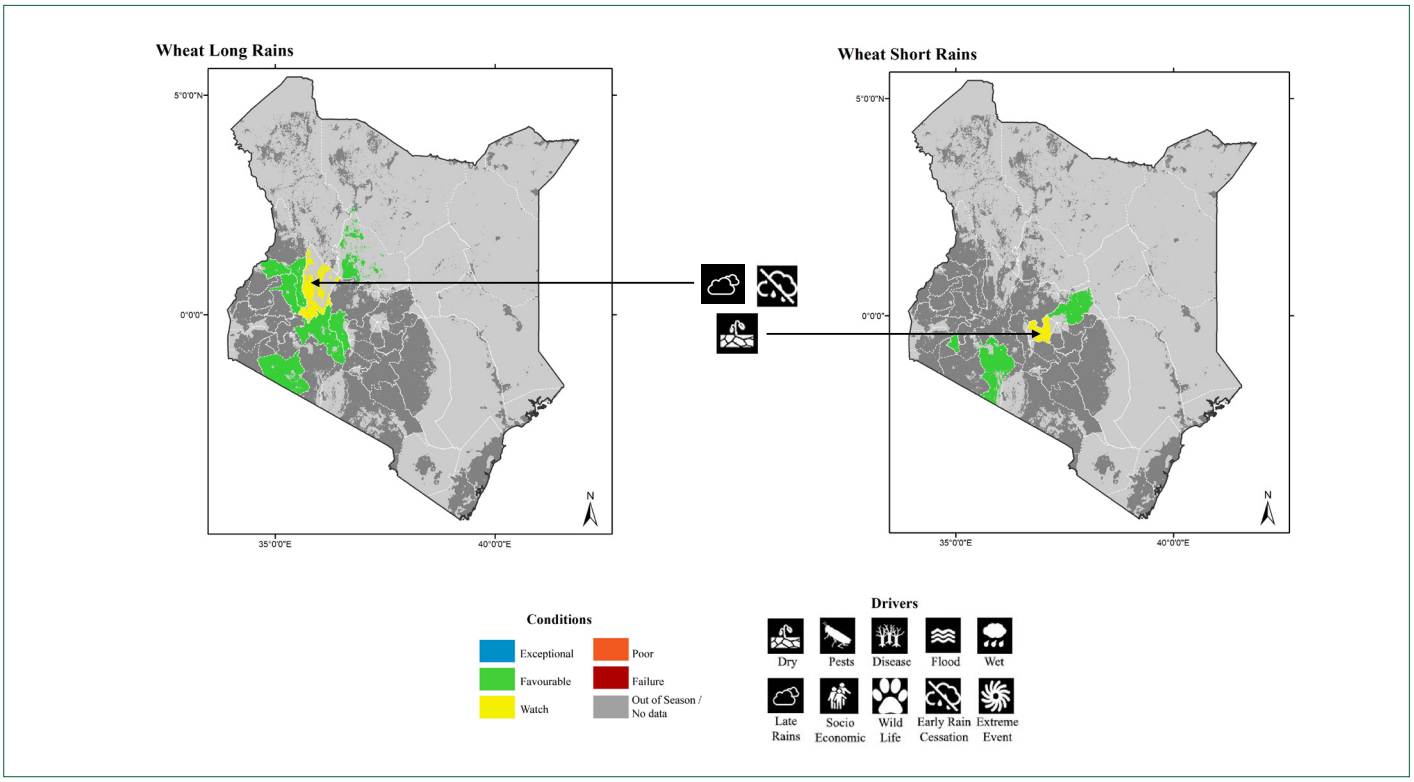
Greengrams and Cowpeas Conditions Short rains

The main growing areas of these crops for grain in upper and lower Eastern and to a lesser extent Coast. The crop was at early vegetative in the upper Eastern to germination in the lower Eastern and Coast regions. However the conditions were under watch in the upper eastern due to dry spell and delayed onset of rains in the lower Eastern and coast regions.



Wheat Conditions Short Rains

Wheat harvesting for the long rains is complete in Uasin Gishu, Trans Nzoia, Laikipia and Elgeyo Marakwet but ongoing in Nyandarua and Samburu counties. The short rains crop in Nyamira and Nyeri counties is at vegetative stage.



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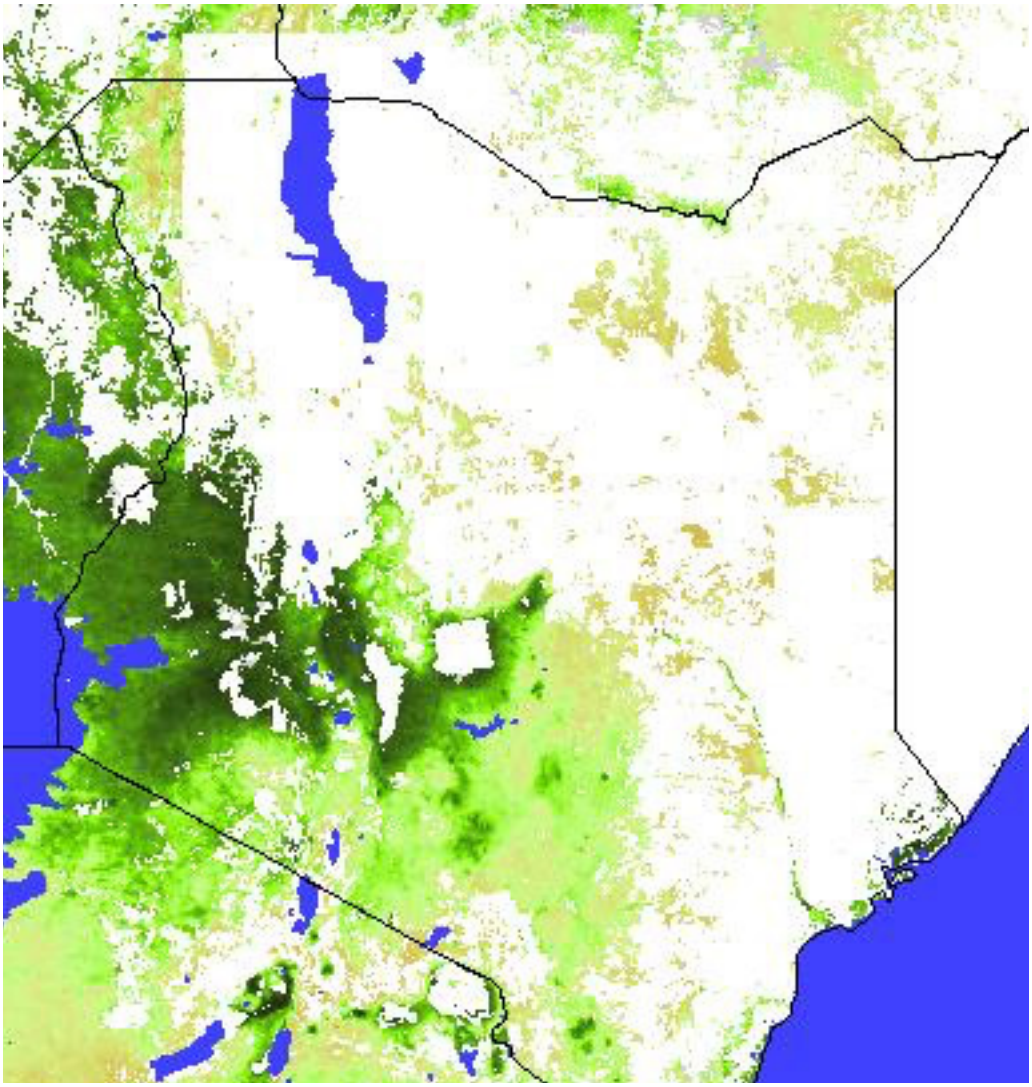
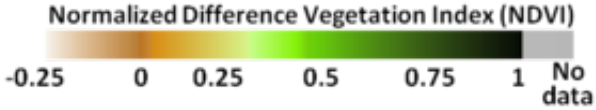
Vegetation Conditions



Key



The Vegetation map represents a 16-day anomaly image for 2021-August-29 to September-13. The brown areas represent areas where the vegetation conditions are worse than "normal" (long term average for the 2000 to 2018). The green color represents areas where conditions are better than "normal". The white color represent values where normal conditions are being experienced. Gray areas are those where no data was collected due to cloud cover.

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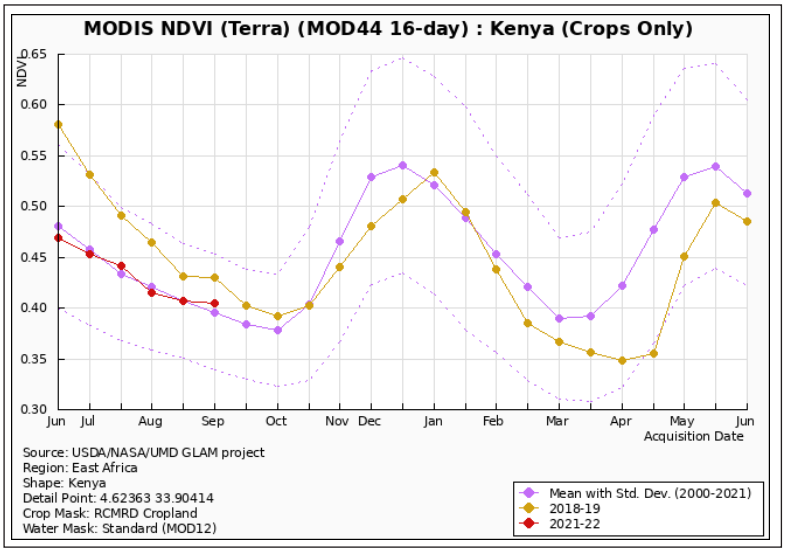

The Graph provides a comparison between current vegetation conditions (red) when compared to the average conditions (Purple) defined by the historical average. The dotted line displays the standard deviation showing how values tend to spread-out from the mean and can be used to gauge the severity of the current conditions.

Climate Outlook

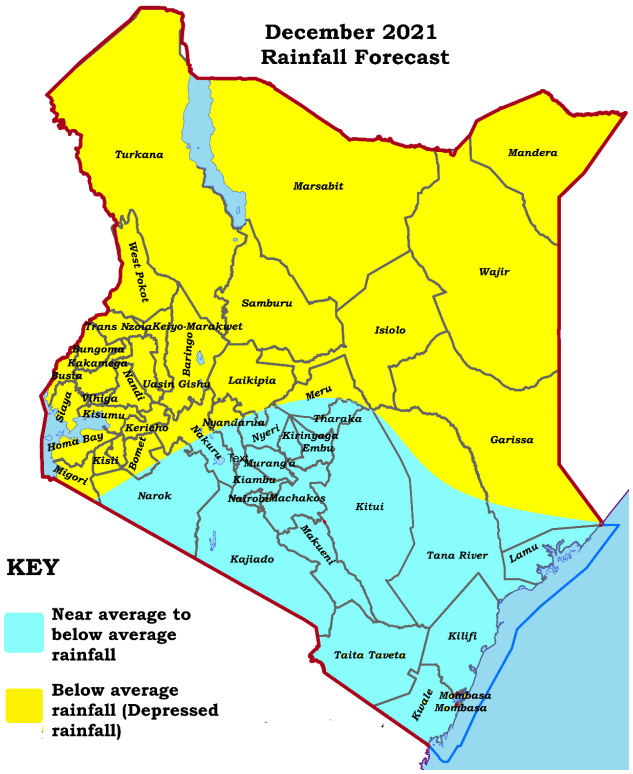

Figure 4: December Rainfall Forecast

November 2021 Weather Review

Dry weather conditions were experienced over several parts of the country. However, occasional rainfall was experienced over few areas in the Highlands West of the Rift Valley, the Lake Victoria Basin, Central and South Rift Valley and the Highlands East of the Rift Valley.

Nairobi, the Southeastern lowlands, Northeastern and the Coastal region experienced rainfall in the fourth week of November. Isolated storms were also recorded over the Southeastern lowlands, Coastal region, Highlands East of the Rift Valley that resulted in floods. Mandera and Msabaha are the only stations that recorded above normal rainfall at 170.6% and 154.8%, respectively. Kisumu, Thika, Moyale, Embu and Meru recorded near average rainfall at 96.7%, 83.8%, 82.3%, 80.7% and 77.2% respectively. All the other stations recorded less than 75% of their November Long-term Means (LTMs). All the other stations recorded less than 75% of their November LTMs.

The distribution both in time and space was generally poor in most areas with most of the rainfall being experienced during the last week of November.

Outlook for December 2021

The forecast indicates that several parts of the country are likely to experience below-average rainfall during the month of December. The Southe Eastern lowlands, Coastal region, Highlands East of the Rift Valley and parts of Southern Rift Valley are however likely to receive near to below average rainfall as depicted in Figure 4. Isolated storms are likely in these regions during the first half of the month.

Crop Cutting in Bahati Sub County, Nakuru County

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Terms and Definitions

Crop Condition Classes

Exceptional	Conditions are much better than average at time of reporting. This label is used only during the grain-filling through harvest stages
Favourable	Conditions range from slightly below to slightly above average at reporting time
Watch	Conditions are not far from average but there is a potential risk to final yields. There is still time and possibility for the crop to recover to average conditions if the ground situation improves. This label is only used during the planting-early vegetative and the vegetative-reproductive stages
Poor	Crop conditions are well below average. Crop yields are likely to be 10-25% below average. This is used when crops are stunted and are not likely to recover, and impact on yields is likely
Failure	Crop conditions are extremely poor. Crop yields are likely to be 25% or more below average

Driver Definitions

These represent the key climatic drivers that are having an impact on crop condition status. They result in production impacts and can act as either positive or negative drivers of crop conditions.

- Wet — Higher than average wetness that results in destruction ie due to water logging and leaching of nutrients
- Late Rains — Late start of the season
- Early Rain Cessation — Rains end earlier than expected in the season
- Disease — Destructive plant diseases
- Socio Economic — Social or economic factors that impact crop conditions (i.e. policy changes, agricultural subsidies, government intervention, etc.)
- Extreme Event — This is a catch-all for all other climate risks (i.e. frost, hailstorms, mudslides etc.)
- Flood — Area is flooded
- Pests — Destructive insects, birds or animals
- Dry — Drier than average
- Wild Life — Crop destruction by wildlife

Conflict: Armed conflict or civil unrest that is preventing the planting or harvesting of the fields by the farmers

Acronyms

The normalized difference vegetation index (NDVI) is a measurement of plant health based on how a plant reflects light (usually sunlight) at specific frequencies.

RCMRD	Regional Centre for Mapping of Resources for Development
SERVIR	Joint development initiative of NASA and USAID
UCSB	University of California Santa Barbara
UMD	University of Maryland
USAID	United States Agency for International Development
FAW	Fall Army Worm
SDCD	State Department for Crops Development
MoALF	Ministry of Agriculture, Livestock and Fisheries
MLND	Maize Lethal Necrosis Disease
GHACOF	Greater Horn of Africa Climate Outlook Forum
ICPAC IGAD	Climate Prediction and Application Centre

Partnerships

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